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cross section having an outside diameter between .400 and .560 inches, which transitions without intervening discontinuities to a tapered intermediate section, said tapered intermediate section transitioning without intervening discontinuities to a relatively smaller diameter tip end, said tip end having an outside diameter 5 [adapted to be fitted to the hosel of a club head] of between .330 and .400 inches, and said tapered intermediate section having a more significant taper than both said butt and tip ends.

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21. (Amended) A golf club shaft comprising:  
an elongated tubular shaft having a length of between about 35 and 47 inches, said elongated tubular shaft having a butt end of relatively larger cross sectional diameter tapering without intervening discontinuities to a tip end 5 of relatively smaller diameter, said tip end having an outside diameter [adapted to be attached to a golf club head] between .330 and .400 inches;  
said butt end having at least one portion with an outside diameter of [about .460] between .400 and .540 inches, said butt end diameter displacing a kick point toward the butt end of the shaft.

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#### REMARKS

Applicants have now had an opportunity to carefully consider the Examiner's Action mailed November 12, 1999. Re-examination and reconsideration are respectfully requested.

Claims 13-18 are rejected under 35 U.S.C. § 112, second paragraph. Claim 13 has been carefully amended to remove the indefiniteness noted by the Examiner. Accordingly, it is submitted that the rejection under 35 U.S.C. § 112 has been resolved.

Claims 1-3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akatsuka (5,437,450) in view of Huang. Applicants respectfully traverse.

Applicants note that claim 1 has been amended to require that the tip end has an outside diameter of between .330 inches and .400 inches. In addition, claim 1 requires that the butt end has an outside diameter between .400 inches and .540 inches. With reference to column 5, lines 62-68 of

Disagree  
1mm - 6.6mm

Akatsuka ('450), this reference teaches a preferred tip end outside diameter of between .185 inches and .263 inches, with a butt end diameter of between .472 inches and .650 inches. Accordingly, Akatsuka ('450) teaches a tip end diameter which is considerably smaller than the tip end diameter of the present invention. In addition, Huang does not suggest such a tip end outside diameter. Therefore, claims 1-3 distinguish patentably and unobviously over the references of record.

With Regard

Further, claim 1, as amended, requires that the butt end has an outside diameter of .400 inches to .540 inches as compared to the butt end diameter of between .472 inches and .650 inches which is taught by Akatsuka. In fact, Akatsuka ('450) teaches that it is preferable to have a butt end diameter between .520 and .590 inches. Accordingly, Akatsuka teaches a larger diameter butt section of a shaft. Applicants note that patentability can exist notwithstanding overlapping ranges. MPEP 2144.05. Moreover, patentability arises when criticality is established by a certain range. In this regard, Applicants' invention demonstrates a superior function as a result of the reduced butt end diameter of the shaft. As shown in FIGS. 10 and 11 of the present application, such a difference in butt end diameter results in considerably greater shaft flex in the butt portion of the shaft as well as displacement of the kick/flex point considerably closer to the butt end of the shaft, both of which are highly desirable.

Akatsuka  
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In paragraph 7 of the Office Action, the Examiner states, "[c]learly an artisan skilled in the art of making a shaft with the right butt size to fit players with smaller hands would have selected a suitable butt end outside diameter . . ." The Examiner relies on Huang as disclosing that "it is desirable to have a profile of a grip and shaft to assume the configuration corresponding to the size and shape of a golfer's hand in order to provide maximum comfort and enhance control over the club during play (Col. 6 Lns. 5-9)." However, it is respectfully submitted that the Examiner's reliance on Huang is misplaced and the above quote is taken out of the context of the detailed description. In contrast, Huang teaches away from the present invention by teaching varying the longitudinal profile of the grip in order to account for players with hands of different sizes. **There is no suggestion to narrow the shaft diameter.** In col 1, lines 26-30, Huang states "[i]t is therefore desirable to be able to vary the longitudinal profile

of a golf club **grip** to meet the desires of any particular golfer, i.e., a person with small hands usually obtains better results with a **grip** of reduced diameter as compared to a person with large hands." As is clear in Col. 5, line 63 - Col. 6, line 9, Huang does not distinguish between the longitudinal profile of the grip versus the longitudinal profile of the bare golf club shaft with the grip attached. In other words, one skilled in the art will appreciate that Huang uses "grip and shaft" to mean a grip with a varying longitudinal profile on a shaft of common diameter. Therefore, claims 1-3 distinguish patentably and unobviously over the references of record.

Claims 7-9 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akatsuka (5,437,450) in view of Huang and further in view of Hogan. Applicants respectfully traverse.

Applicants note that claim 7 has been amended to require that the tip end has an outside diameter of between .330 inches and .400 inches. In addition, claim 7 requires that the butt end has an outside diameter between .400 inches and .540 inches. With reference to column 5, lines 62-68 of Akatsuka ('450), this reference teaches a preferred tip end outside diameter of between .185 inches and .263 inches, with a butt end diameter of between .472 inches and .650 inches. Accordingly, Akatsuka ('450) teaches a tip end diameter which is considerably smaller than the tip end diameter of the present invention. In addition, Huang does not suggest such a tip end outside diameter. Therefore, claims 7-9 and 11 distinguishes patentably and unobviously over the references of record.

Further, claim 7, as amended, requires that the butt end has an outside diameter of .400 inches to .540 inches as compared to the butt end diameter of between .472 inches and .650 inches which is taught by Akatsuka. In fact, Akatsuka ('450) teaches that it is preferable to have a butt end diameter between .520 and .590 inches. Accordingly, Akatsuka teaches a larger diameter butt section of a shaft. Applicants note that patentability can exist notwithstanding overlapping ranges. MPEP 2144.05. Moreover, patentability arises when criticality is established by a certain range. In this regard, Applicants' invention demonstrates a superior function as a result of the reduced butt end diameter of the shaft. As shown in FIGS. 10 and 11 of the present

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application, such a difference in butt end diameter results in considerably greater shaft flex in the butt portion of the shaft as well as displacement of the kick/flex point considerably closer to the butt end of the shaft, both of which are highly desirable.

In paragraph 7 of the Office Action, the Examiner states, “[c]learly an artisan skilled in the art of making a shaft with the right butt size to fit players with smaller hands would have selected a suitable butt end outside diameter . . . .” The Examiner relies on Huang as disclosing that “it is desirable to have a profile of a grip and shaft to assume the configuration corresponding to the size and shape of a golfer’s hand in order to provide maximum comfort and enhance control over the club during play (Col. 6 Lns. 5-9).” However, it is respectfully submitted that the Examiner’s reliance on Huang is misplaced and the above quote is taken out of the context of the detailed description. In contrast, Huang teaches away from the present invention by teaching varying the longitudinal profile of the **grip** in order to account for players with hands of different sizes.

**There is no suggestion to narrow the shaft diameter.** In col 1, lines 26-30, Huang states “[i]t is therefore desirable to be able to vary the longitudinal profile of a golf club **grip** to meet the desires of any particular golfer, i.e., a person with small hands usually obtains better results with a **grip** of reduced diameter as compared to a person with large hands.” As is clear in Col. 5, line 63 - Col. 6, line 9, Huang does not distinguish between the longitudinal profile of the grip versus the longitudinal profile of the bare golf club shaft with the grip attached. In other words, one skilled in the art will appreciate that Huang uses “grip and shaft” to mean a grip with a varying longitudinal profile on a shaft of common diameter. Therefore, claims 7-9 and 11 distinguish patentably and unobviously over the references of record.

In addition, the Examiner states that “it would have been obvious to have a butt end, intermediate section, and a tip end as defined by the claims in order to have a lower kick point to obtain more elevation when hitting a ball for the same swing by having a stiffer butt end and a more flexible tip end.” In other words, Hogan stresses the importance of creating a strong butt end to induce flexure in the central and lower portions of the shaft. In contrast, Applicants claim a golf shaft having a smaller diameter butt end which has a higher flex/kick

point achieved by a more flexible butt end and a stiffer tip end. Therefore, **Hogan teaches away from the Applicant's invention.** Therefore, claims 7-9 and 11 distinguish patentably and unobviously over the references of record.

Claims 13-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akatsuka (5,437,450) in view of Huang and further in view of Hogan. Applicants respectfully traverse.

Claim 13, as amended, requires that the butt end has an outside diameter of .400 inches to .540 inches as compared to the butt end diameter of between .472 inches and .650 inches which is taught by Akatsuka. In fact, Akatsuka ('450) teaches that it is preferable to have a butt end diameter between .520 and .590 inches. Accordingly, Akatsuka teaches a larger diameter butt section of a shaft. Applicants note that patentability can exist notwithstanding overlapping ranges. MPEP 2144.05. Moreover, patentability arises when criticality is established by a certain range. In this regard, Applicants' invention demonstrates a superior function as a result of the reduced butt end diameter of the shaft. As shown in FIGS. 10 and 11 of the present application, such a difference in butt end diameter results in considerably greater shaft flex in the butt portion of the shaft as well as displacement of the kick/flex point considerably closer to the butt end of the shaft, both of which are highly desirable.

*four →  
different*

In paragraph 7 of the Office Action, the Examiner states, “[c]learly an artisan skilled in the art of making a shaft with the right butt size to fit players with smaller hands would have selected a suitable butt end outside diameter . . . .” The Examiner relies on Huang as disclosing that “it is desirable to have a profile of a grip and shaft to assume the configuration corresponding to the size and shape of a golfer's hand in order to provide maximum comfort and enhance control over the club during play (Col. 6 Lns. 5-9).” However, it is respectfully submitted that the Examiner's reliance on Huang is misplaced and the above quote is taken out of the context of the detailed description. In contrast, Huang teaches away from the present invention by teaching varying the longitudinal profile of the **grip** in order to account for players with hands of different sizes.

*Agree*  
**There is no suggestion to narrow the shaft diameter.** In col 1, lines 26-30, Huang states “[i]t is therefore desirable to be able to vary the longitudinal profile

of a golf club **grip** to meet the desires of any particular golfer, i.e., a person with small hands usually obtains better results with a **grip** of reduced diameter as compared to a person with large hands." As is clear in Col. 5, line 63 - Col. 6, line 9, Huang does not distinguish between the longitudinal profile of the grip versus the longitudinal profile of the bare golf club shaft with the grip attached. In other words, one skilled in the art will appreciate that Huang uses "grip and shaft" to mean a grip with a varying longitudinal profile on a shaft of common diameter. Therefore, claims 13-18 distinguish patentably and unobviously over the references of record.

In addition, the Examiner relies on Hogan in stating that "it would have been obvious to have a butt end, intermediate section, and a tip end as defined by the claims in order to have a lower kick point to obtain more elevation when hitting a ball for the same swing by having a stiffer butt end and a more flexible tip end." In other words, Hogan stresses the importance of creating a strong butt end to induce flexure in the central and lower portions of the shaft. In contrast, Applicants claim a golf shaft having a smaller diameter butt end which has a higher flex/kick point achieved by a more flexible butt end and a stiffer tip end. Therefore, **Hogan teaches away from the Applicant's invention.** Therefore, claims 13-18 distinguish patentably and unobviously over the references of record.

Claims 19-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akatsuka (5,437,450) in view of Huang and further in view of Hogan. Applicants respectfully traverse.

Applicants note that claim 19 has been amended to require that the tip end has an outside diameter of between .330 inches and .400 inches. In addition, claim 19 requires that the butt end has an outside diameter between .400 inches and .560 inches. With reference to column 5, lines 62-68 of Akatsuka ('450), this reference teaches a preferred tip end outside diameter of between .185 inches and .263 inches, with a butt end diameter of between .472 inches and .650 inches. Accordingly, Akatsuka ('450) teaches a tip end diameter which is considerably smaller than the tip end diameter of the present invention. In addition, Huang does not suggest such a tip end outside diameter. Therefore, claims 19-20 distinguish patentably and unobviously over the references of

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Further, claim 19, as amended, requires that the butt end has an outside diameter of .400 inches to .560 inches as compared to the butt end diameter of between .472 inches and .650 inches which is taught by Akatsuka. In fact, Akatsuka ('450) teaches that it is preferable to have a butt end diameter between .520 and .590 inches. Accordingly, Akatsuka teaches a larger diameter butt section of a shaft. Applicants note that patentability can exist notwithstanding overlapping ranges. MPEP 2144.05. Moreover, patentability arises when criticality is established by a certain range. In this regard, Applicants' invention demonstrates a superior function as a result of the reduced butt end diameter of the shaft. As shown in FIGS. 10 and 11 of the present application, such a difference in butt end diameter results in considerably greater shaft flex in the butt portion of the shaft as well as displacement of the kick/flex point considerably closer to the butt end of the shaft, both of which are highly desirable.

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Akatsuka (5,437,450) in view of Huang. Applicants respectfully traverse.

Applicants note that claim 21 has been amended to require that the tip end has an outside diameter of between .330 inches and .400 inches. In addition, claim 21 requires that the butt end has an outside diameter of between .400 and .540 inches. With reference to column 5, lines 62-68 of Akatsuka ('450), this reference teaches a preferred tip end outside diameter of between .185 inches and .263 inches, with a butt end diameter of between .472 inches and .650 inches. Accordingly, Akatsuka ('450) teaches a tip end diameter which is considerably smaller than the tip end diameter of the present invention. In addition, Huang does not suggest such a tip end outside diameter. Therefore, claim 21 distinguishes patentably and unobviously over the references of record.

Further, claim 21, as amended, requires that the butt end has an outside diameter of .400 inches to .540 inches as compared to the butt end diameter of between .472 inches and .650 inches which is taught by Akatsuka. In fact, Akatsuka ('450) teaches that it is preferable to have a butt end diameter between .520 and .590 inches. Accordingly, Akatsuka teaches a larger diameter

butt section of a shaft. Applicants note that patentability can exist notwithstanding overlapping ranges. MPEP 2144.05. Moreover, patentability arises when criticality is established by a certain range. In this regard, Applicants' invention demonstrates a superior function as a result of the reduced butt end diameter of the shaft. As shown in FIGS. 10 and 11 of the present application, such a difference in butt end diameter results in considerably greater shaft flex in the butt portion of the shaft as well as displacement of the kick/flex point considerably closer to the butt end of the shaft, both of which are highly desirable.

In paragraph 7 of the Office Action, the Examiner states, “[c]learly an artisan skilled in the art of making a shaft with the right butt size to fit players with smaller hands would have selected a suitable butt end outside diameter . . . .” The Examiner relies on Huang as disclosing that “it is desirable to have a profile of a grip and shaft to assume the configuration corresponding to the size and shape of a golfer’s hand in order to provide maximum comfort and enhance control over the club during play (Col. 6 Lns. 5-9).” However, it is respectfully submitted that the Examiner’s reliance on Huang is misplaced and the above quote is taken out of the context of the detailed description. In contrast, Huang teaches away from the present invention by teaching varying the longitudinal profile of the **grip** in order to account for players with hands of different sizes. **There is no suggestion to narrow the shaft diameter.** In col 1, lines 26-30, Huang states “[i]t is therefore desirable to be able to vary the longitudinal profile of a golf club **grip** to meet the desires of any particular golfer, i.e., a person with small hands usually obtains better results with a **grip** of reduced diameter as compared to a person with large hands.” As is clear in Col. 5, line 63 - Col. 6, line 9, Huang does not distinguish between the longitudinal profile of the **grip** versus the longitudinal profile of the bare golf club shaft with the **grip** attached. In other words, one skilled in the art will appreciate that Huang uses “**grip and shaft**” to mean a **grip** with a varying longitudinal profile on a shaft of common diameter. Therefore, claim 21 distinguishes patentably and unobviously over the references of record.

With respect to the rejections of dependent claims 2-3, 5-6, 8-9, 11-12, 14-18, and 20, Applicants note that each of these is a dependent claim

upon the claims discussed above. Accordingly, withdrawal of the rejections is respectfully requested.

**CONCLUSION**

For the reasons detailed above, it is respectfully submitted all claims (1-3, 5, 7-9, 11-21) remaining in the application are now in condition for allowance. An early notice to that effect is therefore earnestly solicited.

Respectfully submitted,

Fay, Sharpe, Fagan,  
Minnich & McKee

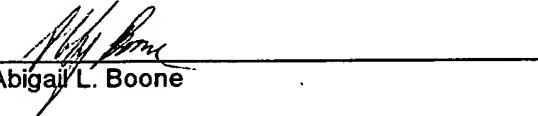


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**CERTIFICATE OF MAILING**

I hereby certify that this **AMENDMENT** in connection with U.S. Application Serial No. **08/787,745** is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on February 14, 2000.

By:



Abigail L. Boone

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